



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

| SERIAL NUMBER | FILING DATE | FIRST NAMED APPLICANT | ATTORNEY DOCKET NO. |
|---------------|-------------|-----------------------|---------------------|
| 07/317,107 | 02/28/89 | ZIMMERMAN T | 1027411 |

TOWNSEND AND TOWNSEND
STUART STREET TOWER
ONE MARKET PLAZA
SAN FRANCISCO, CA 94105

| EXAMINER | |
|------------|--------------|
| OBERLEY, A | |
| ART UNIT | PAPER NUMBER |
| 266 | 9 |

DATE MAILED:

06/30/89

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 5-8-89 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☐ Notice re Patent Drawing, PTO-948.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of informal Patent Application, Form PTO-152
- ☐ Information on How to Effect Drawing Changes, PTO-1474
- ☐

Part II SUMMARY OF ACTION

- ☒ Claims 1-61 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
- ☐ Claims _____ have been cancelled.
- ☐ Claims _____ are allowed.
- ☒ Claims 1-61 are rejected.
- ☐ Claims _____ are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.
- ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
- ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
- ☐ The corrected or substitute drawings have been received on _____. These drawings are ☐ acceptable;
☐ not acceptable (see explanation).
- ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
- ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
- ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
- ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
- ☐ Other

1. Some of the references cited on the PTO-1449 have been crossed out since they have already been considered and cited on PTO-948s previously.
2. The specification states that figure 2 show the preferred embodiment of the glove, but the drawings show the figure as 2A this either the specification or drawings must be corrected. Likewise the figure 2 in the drawings must be mentioned in the specification; 37 CFR 1.84(F); and figure 2A and 2 must be mentioned on the brief description of the drawings; MPEP 608.01(F).

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 13-19 and 33-41 are rejected under 35 U.S.C. 103 as being unpatentable over Haney.

As to claims 13-15, Haney discloses flex sensing means (22 and reflectors a-1), a cursor (animated figure), and cursor display means. Obviously the device can be implemented in real time depending upon what type of computer is used, i.e., how fast the computer is.

As to claims 16-19, the particular part of the body that is sensed is an obvious design choice since it depends upon what the user wants to animate.

As to claims 33-37, Haney uses orientation and flex sensing means (22 and reflective elements a-1) which can obviously be fixed to the display structure and computer, thus sensing would have been accomplished relative to the display as do Applicants since their orientation sensors (24) are fixed to the display.

As to claims 38-41, note the discussion of claims 16-19 above.

Claims 1-3, 8, 10, 11, 13-23, 33-45, 48, 49, and 56-61 are rejected under 35 U.S.C. 103 as being unpatentable over Haney as applied to claims 19 and 41 above, and further in view of Zimmerman.

Zimmerman teaches sensors used on a person including a glove (figure 4). Zimmerman further teaches using the sensors for position and animation, thus it would have been obvious to have used the sensors of Zimmerman in the animation system of Haney to indicate a more detailed movement.

As to claims 56-59, the cursor inherently depicts pitch, roll and yaw since the display is displaying body movements.

6. Claims 4-7 and 9 are rejected under 35 U.S.C. 103 as being unpatentable over Haney in view of Zimmerman as applied to claim 3 above, and further in view of Herrington and Davison.

The sensor means of Haney senses both the gesture and relative position, and any other well known means for doing the same can be used. Thus Herrington and Davison are cited to teach the conventional use of ultrasonics to provide relative positional information which could have been used in the device to Haney as modified.

7. Claim 12 is rejected under 35 U.S.C. 103 as being unpatentable over Haney in view of Zimmerman as applied to claim 1 above, and further in view of King et al.

As pointed out above any known position sensing means can be used in the device to Haney as modified thus it would have been obvious to have used the optical transmitting and receiving means of King et al.

8. Claims 24-32, 46-47 and 50-55 are rejected under 35 U.S.C. 103 as being unpatentable over Haney in view of Zimmerman as applied above and further in view of Lefkowitz and Baer et al.

Note the discussion of Haney above who discloses position sensing means (22 and reflectors a-1) and interface means (12,20). The device to Haney is not used in an interactive environment, but Lefkowitz provides the motivation to use the device of Haney in an interactive device, since Lefkowitz teaches that detection of a body part can be used to control and object that interactes with vitual objects. Baer et al is simply cited to show the circuitry for indicating con-

tact between controlled objects and virtual objects to manipulate the same.

As to the remaining claims note the discussion above with regard to claims 13-19 and 33-41.

9. Claims 1,3,10,13-47, and 52-59 are rejected under 35 U.S.C. 103 as being unpatentable over Fisher et al (virtual Environment Display system).

Fisher et al disclose Applicant's recited device except for stating whether the cursor interacts in real time. Note the discussion above with regard to the real time limitation.

10. Claims 48-51 and 60-61 are rejected under 35 U.S.C. 103 as being unpatentable over Fisher et al as applied to claims 13, 26 and 34 above, and further in view of Zimmerman.

Fisher et al does not state that analog signals are used but Zimmerman disclose a position sensor which can be used in the device to Fisher et al which does use analog signals.

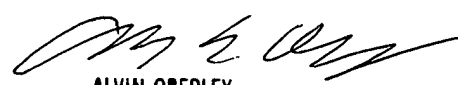
11. Applicant's arguments filed May 8, 1989 have been fully considered but they are not deemed to be persuasive.

The addition of real time to the claims does not define over the art since the device of Haney can be implemented with a high speed computer.

New art rejection have been applied to the claims thus Applicant's remaining arguments are moot.

Any inquiry concerning this communication should be directed to Examiner Alvin Oberley at telephone number 703-557- 6372.

Oberley/rk
6/15/89


ALVIN OBERLEY
PATENT EXAMINER
ART UNIT 266